

DETAILED ACTION

Response to Amendment

1. This Action is in regards to the Response received on 3 March 2008.
2. Applicant's Amendments, (see Amendments to specifications filed 18 July 2007) with respect to Specifications and Drawings have been fully considered and are persuasive. The Objections to Specifications and Drawings has been withdrawn.
3. Claims 9, 13 & 14 have been cancelled by the applicant and thereby are withdrawn from consideration.
4. Applicant's arguments with respect to claims 1-8 & 10-12 have been considered but are moot in view of the following new ground(s) of rejection.

Drawings

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "412" and "402" have both been used to designate "Compressed Audio Block, Stream 1" in Figure 4. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

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the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

6. Claim 8 is are objected to because of the following informalities:

Claim 8, line 8 recites the phrase "an audio compression module audio for receiving audio from the audio capture" where it should read "an audio compression module for receiving audio from the audio capture".

Any claim not specifically addressed above, is being objected to as incorporating the deficiencies of a claim upon which it depends.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 1 & 2** are rejected under 35 U.S.C. 102(b) as being anticipated by

Kozdon et al. (Kozdon) US Patent No. 6240070B1.

8. Regarding **Claim 1** Kozdon discloses, A conferencing system (**col.2, line 67 & Fig 2, 100**) comprising: a server (**col.3, line 1 & Fig 2, 102**) for relaying a plurality of compressed audio streams received by the server (**col.3, line 4-5 & Fig 2, 108**) from conferencing stations (**col.3, line 1-2 & Fig 2, clients 103-105**) to conferencing stations (**col.3, line 1-2 & Fig 2, clients 103-105**) of the system (**col.2, line 67 & Fig 2, 100**); and a plurality of said conferencing stations (**col.3, line 1-2 & Fig 2, clients 103-105**), where each of said conferencing stations comprises: a processor (**col.6, line 19-23, personal computer contains a processor**), a microphone (**col. 6, line 8, Fig 4, 312**) coupled through audio capture circuitry (**col. 6, line 10, microphone interface, Fig 4, 314**) to the processor , a network interface apparatus (**col. 6, lines 16-19, Fig 4, 300 & 318**) coupled to the processor, audio output apparatus (**col. 6, line 5, Fig 2, 312**), memory coupled to the processor (**col.6, line 19-23, personal computer contains memory**), the memory having stored therein program modules comprising: an audio compression module (**col. 6, line 9, Fig 4, 316**) for receiving audio from the audio capture circuitry (**col. 6, lines 8-9, Fig 4, 314**), compressing (**col. 6, lines 12-13**) the received audio into compressed audio (**col. 6, line 14**) and for transmitting the compressed audio through the network interface apparatus as a compressed audio stream, and an audio mixer module (**col. 5, lines 57-58, Fig 4, 302, decompressor**) for receiving at least one compressed audio stream from at least one of said conferencing stations as relayed by the server through the network interface apparatus, for decompressing (**col. 5, lines 58-59**) and mixing (**col. 5, lines 8-9, Fig 4, 304**) the at

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least one compressed audio stream into mixed audio, and for providing the mixed audio to the audio output apparatus (**col. 6, lines 5 & Fig 4, 310**).

9. Regarding **Claim 2**, Kozdon discloses, the conferencing system of claim 1, wherein the audio mixer module of each station receives, decompresses, and mixes a plurality of said compressed audio streams relayed through the server (**col. 3, line 1 & Fig 2, 102**).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

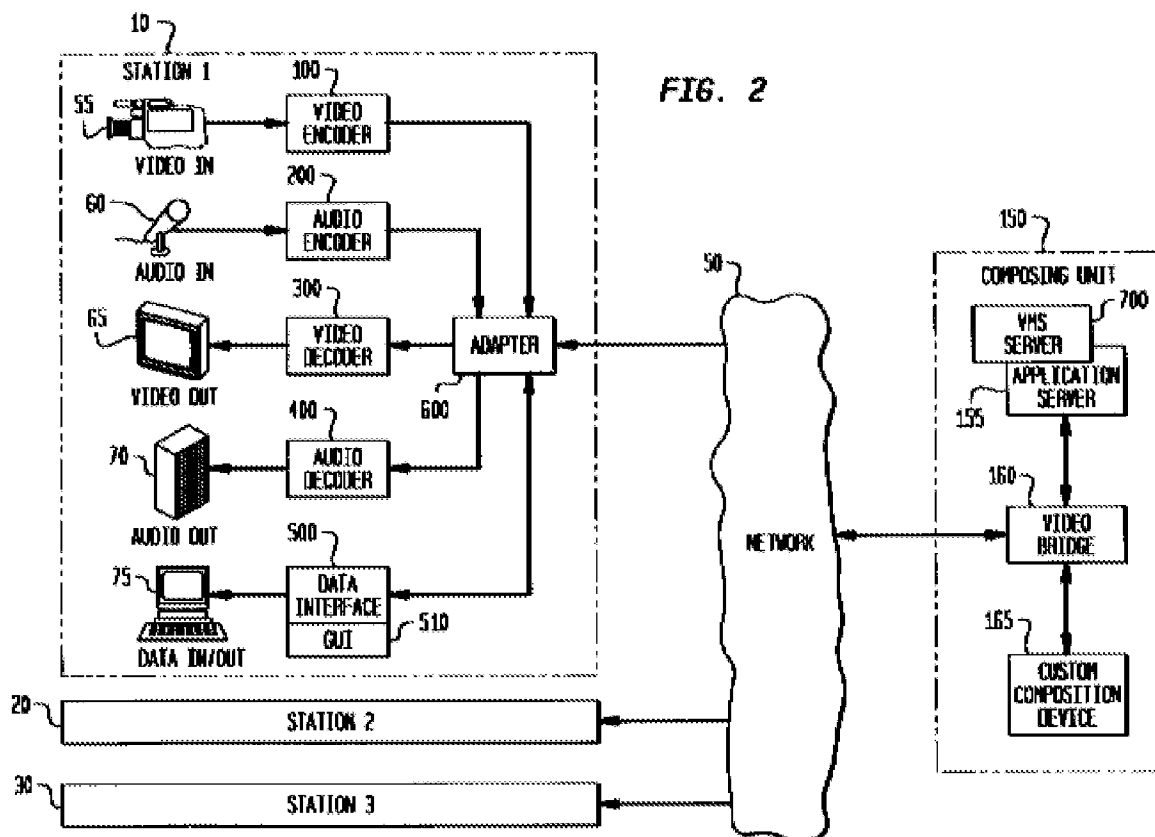
1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. **Claims 3** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kozdon as applied to claims 2 above, and in view of Kuthyar et al. (Kuthyar) US Patent No. 6075571.

11. Regarding **Claims 3**, Kozdon discloses the conferencing system of claim 2. However Kozdon does not explicitly teach, at least one of said conferencing station further comprises: a video source, a compression module in the memory for receiving video from the video source, for compressing the video into a first video stream, and for transmitting the first video stream to the server, a video decompression module for receiving a second video stream, decompressing the second video stream into images, and a display subsystem for presenting the images to a user.

12. In the same field of endeavor, Kuthyar teaches, **(col. 5, lines 26-28 and Fig 2**, as shown in FIG. 2, the typical inpoint telecommunications facility architecture of any station 1-n, is a video recording device 55 **(video source)** coupled to a video encoder 100 **(video compression module)**; **(col. 5, lines 30-44 and Fig 2**, a video output device hereafter called a screen 65 **(display subsystem)** connected to a video decoder 300 **(video decompression module)**, a data processing unit 75 for data input and output connected to a data interface 500 and a Graphical User Interface (GUI) 510, the former involved in data manipulation and the latter controlling screen image composition. Each of the encoders, decoders and interfaces are, in turn, coupled to an adapter card or an adapter board 600, as shown in block 10 of FIG. 2. Adapter

600, which can be a circuit board or card for installation in a computer or server (not shown), serves to multiplex and de-multiplex all of the individual signals onto a communication line or transport medium 40 (transmitting the video stream to the server)).



13. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to combine Kozdon and Kuthyar to fully illustrate the architecture of the audio/video conferencing workstation of an audio/video conferencing system. Kozdon had mentioned audio/video/data but only illustrated the audio portion of an audio/video/data conferencing system.

Claim Rejections - 35 USC § 103

14. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kozdon in view of Everett (Everett) US Patent No. 5864816 and further in view of Curtin (Curtin) US Patent No. 6898637.

15. Regarding **Claim 4** Kozdon discloses the system of claim 2, wherein the server comprises a relay module for receiving audio streams from the conferencing stations, for combining the received audio streams into a composite audio stream, and for retransmitting the composite audio stream to the conferencing stations (**col.3, line 1-2 & Fig 2, clients 103-105**). However Kozdon does not explicitly teach; the composite audio stream is created without decompressing or mixing the received audio streams.

16. In the same field of endeavor, Everett teaches, (**col. 2, lines 13-19 & col. 4, lines 36-54 & Fig 2. & col. 6, lines 28-35** mixing two or more compressed digitized audio signals (**Composite audio streams**) without decompressing them).

17. It would have been obvious to one of ordinary skill in the networking art at the time the applicant's invention was made to combine Kozdon and Everett to increase the number of streams to be mixed simultaneously, and to reduce the CPU over head & total band-width requirement.

18. In the same field of endeavor, Curtin teaches, (**col. 2, lines 13-20** the composite audio signal may be created without any mixing of the contributions provided by each contributor).

19. It would have been obvious to one of ordinary skill in the networking art at the time the applicant's invention was made to combine Kozdon-Everett with Curtin to provide a networked based method and apparatus for combining audio signals from different sources at respective client computers into a composite audio signal at a central server computer and then provide the composite audio signal to the individual client computers.

Claim Rejections - 35 USC § 103

20. **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kozdon and Everett and Curtin as applied to claim 4 above, and in view of Memhard et al. (Memhard) US Patent No. 6201859B1.

21. Regarding **Claim 5** Kozdon-Everett-Curtin disclose the conferencing system of claim 4. However Kozdon-Everett-Curtin do not explicitly teach the relay module selects a maximum number of received audio streams for retransmission according to a priority scheme incorporating a predetermined conferencing station priority.

22. In the same field of endeavor, Memhard teaches, (**col. 9, lines 9-14** “Chaired” control, where the audio streams are selected by the “chairperson” who has station priority over other stations).

23. It would have been obvious to one of ordinary skill in the networking art at the time the applicant’s invention was made to combine Kozdon-Everett-Curtin with Memhard to prevent contention between conferencing stations by giving priority to certain stations and to limit the maximum number of users based on the available bandwidth to reduce bandwidth saturation of the channel.

Claim Rejections - 35 USC § 103

24. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kozdon and Everett and Curtin as applied to claim 4 above, and in view of Robert et al. (Robert) US Patent No. 6327276B1.

25. Regarding **Claim 6** Kozdon-Everett-Curtin disclose the conferencing system of claim 4, wherein a first said conferencing station receives the composite audio stream, decompresses selected audio streams from individual compressed audio streams of the composite audio stream. However Kozdon-Everett-Curtin do not explicitly teach the selected audio streams determined such that audio from the first said conferencing station relayed through the server is discarded by the first conferencing station.

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26. In the same field of endeavor, Robert teaches, (**col. 6, lines 52-65** once the composite audio stream is received in a particular client, that client will perform echo cancellation to substantially eliminate its own component of the composite signal).

27. It would have been obvious to one of ordinary skill in the networking art at the time the applicant's invention was made to combine Kozdon-Everett-Curtin with Robert to enhance the quality of the audio on the conferencing station by eliminate the echo generated by conferencing station and the conferencing system as taught by Robert.

Claim Rejections - 35 USC § 103

28. **Claims 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kozdon as applied to claims 2 above, and in view of Kilgore (Kilgore) US Patent No. 6961324B2.

29. Regarding **Claim 7** Kozdon discloses the system of claim 2, wherein the server comprises a relay module for receiving audio streams from the conferencing stations, for combining the received audio streams into a composite audio stream, and for retransmitting the composite audio stream to the conferencing stations. However Kozdon does not explicitly teach the composite audio stream is created by interleaving compressed audio from packets of the received audio streams.

30. In the same field of endeavor, Kilgore teaches, **(col. 1, lines 54-67 & col. 2, lines 1-7 Interleaving compressed audio streams)**.

31. It would have been obvious to one of ordinary skill in the networking art at the time the applicant's invention was made to combine Kozdon and Kilgore to reduce the interval in which no data is available for playback since interleaving improves the quality of the out put by reducing the interference and distortion which are the affects of streaming compressed audio and video signals.

Claim Rejections - 35 USC § 103

32. **Claims 8 & 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kozdon in view of Robert.

33. Regarding **Claim 8** Kozdon discloses, A first conferencing station **(col.3, line 1-2 & Fig 2, clients 103-105)** comprising a processor **(col.6, line 19-23, personal computer contains a processor)**, a microphone **(col. 6, line 8, Fig 4, 312)** coupled through audio capture circuitry **(col. 6, line 10 microphone interface, Fig 4, 314)** to the processor, a network interface apparatus **(col. 6, lines 16-19, Fig 4, 300 & 318)** coupled to the processor, audio output apparatus **(col. 6, line 5, Fig 2, 312)**, memory coupled to the processor **(col.6, line 19-23, personal computer contains memory)**, the memory having recorded therein program modules comprising: an audio compression module **(col. 6, line 9, Fig 4, 316)** for receiving audio from the audio

capture circuitry (**col. 6, line 10, microphone interface, Fig 4, 314**) and for transmitting compressed audio through the network interface apparatus (**col. 6, lines 16-19, Fig 4, 300 & 318**); and an audio mixer module (**col. 5, lines 57-58, Fig 4, 302, decompressor**) for receiving compressed audio streams through the network interface apparatus (**col. 6, lines 16-19, Fig 4, 300 & 318**) from a plurality of conferencing stations (**col.3, line 1-2 & Fig 2, clients 103-105**), for decompressing (**col. 5, lines 58-59**) and mixing (**col. 5, lines 8-9, Fig 4, 304**) the audio streams into mixed audio, and for providing the mixed audio to the audio output apparatus (**col. 6, lines 5 & Fig 4, 310**); wherein the conferencing station decompresses and mixes selected audio streams of the compressed audio streams (**col. 2, lines 38-39**). However Kozdon does not explicitly teach the selected audio streams being selected from compressed audio streams of the composite audio streams such that audio from the first said audio conferencing station is not decompressed by the first conferencing station.

34. In the same field of endeavor, Robert teaches, (**col. 6, lines 52-65** once the composite audio stream is received in a particular client, that client will perform echo cancellation to substantially eliminate its own component of the composite signal, since the component is eliminated, this component will not be decompressed).

35. It would have been obvious to one of ordinary skill in the networking art at the time the applicant's invention was made to combine Kozdon and Robert to eliminate the echo (signal from the same station), since echo is a by product caused by the delay

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created in the conferencing systems due to compression and decompression as well as signal transfer between the stations and the server which effects the quality of conference for the participants.

36. Regarding **Claim 11** Kozdon discloses, A computer software product comprising a machine readable media having recorded thereon machine readable code for execution on a first conferencing station for: an audio compression module (**col. 6, line 9, Fig 4, 316**) for receiving audio from audio capture circuitry (**col. 6, line 10, microphone interface, Fig 4, 314**), compressing the audio (**col. 6, lines 12-13**), and for transmitting compressed audio through network interface apparatus (**col. 6, lines 16-19, Fig 4, 300 & 318**) to a server (**col.3, line 1 & Fig 2, 102**); and an audio mixer module (**col. 5, lines 57-58, Fig 4, 302, decompressor**) for receiving a composite compressed audio stream through the network interface apparatus (**col. 6, lines 16-19, Fig 4, 300 & 318**) from said server (**col.3, line 1 & Fig 2, 102**), for selecting selected audio streams from the composite audio stream, for decompressing and mixing (**col. 5, lines 8-9, Fig 4, 304**) the selected audio streams, and for providing audio to the audio output apparatus (**col. 6, lines 5 & Fig 4, 310**); wherein the selected audio streams are selected from compressed audio streams of the composite audio stream (**col. 2, lines 38-39**). However Kozdon does not explicitly teach the audio from the first said conferencing station relayed through the server is not decompressed by the mixer module.

37. In the same field of endeavor, Robert teaches, (**col. 6, lines 52-65** once the composite audio stream is received in a particular client, that client will perform echo cancellation to substantially eliminate its own component of the composite signal, since the component is eliminated, this component will not be decompressed).

38. It would have been obvious to one of ordinary skill in the networking art at the time the applicant's invention was made to combine Kozdon and Robert to eliminate the echo (signal from the same station), since echo is a by product caused by the delay created in the conferencing systems due to compression and decompression as well as signal transfer between the stations and the server which effects the quality of conference for the participants.

Claim Rejections - 35 USC § 103

39. **Claim 12** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kozdon in view of Curtin.

40. Regarding **Claim 12** Kozdon et al. disclose, A method of conferencing comprising the steps of: at each of a plurality of conferencing stations (**col.3, line 1-2 & Fig 2, clients 103-105**), compressing audio into compressed audio (**col. 6, lines 12-13**), and for transmitting compressed audio through network interface apparatus (**col. 6, lines 16-19, Fig 4, 300 & 318**) to a server (**col.3, line 1 & Fig 2, 102**); at the server (**col.3, line 1 & Fig 2, 102**), combining the compressed audio streams from the plurality

of conferencing stations (**col.3, line 1-2 & Fig 2, clients 103-105**) into a composite stream (**col. 5, line 45-46 summation stream**); distributing the composite stream over a network to the plurality of said conferencing stations (**col. 5, lines 46-51**); at at least one conferencing station, decompressing and mixing a plurality of the audio streams of the composite stream into a reconstructed audio stream (**col. 5, lines 57-58, Fig 4, 302, decompressor**); and driving speakers with the reconstructed audio stream (**col. 6, lines 5 & Fig 4, 310**). However Kozdon does not explicitly teach the combining the compressed audio streams into a composite stream is performed without mixing.

41. In the same field of endeavor, Curtin teaches, (**col. 2, lines 13-20** the composite audio signal may be created without any mixing of the contributions provided by each contributor).

42. It would have been obvious to one of ordinary skill in the networking art at the time the applicant's invention was made to combine Kozdon with Curtin to provide a networked based method and apparatus for combining audio signals from different sources at respective client computers into a composite audio signal at a central server computer and then provide the composite audio signal to the individual client computers.

Response to Arguments

43. Applicant's arguments filed on 3 March 2008 have been carefully considered but they are not deemed fully persuasive. However, because there exists the likelihood of

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future presentation of these arguments, the Examiner thinks that it is prudent to address applicant's main point of contention. Applicant's arguments include:

A. Applicant argues that regarding amended Claims 1 & 2, Kozdon fails to provide "a plurality of compressed auto streams received by the server from conferencing stations".

B. Applicant argues that regarding amended Claims 8 & 11, Kozdon fails to disclose automatically excluding a stream from the mixing process.

C. Applicant argues that regarding amended Claim 12, Kozdon fails to disclose a composite stream that is created by the server without decoding and mixing.

D. Applicant argues that the remaining Claims are now patentable by dependence to amended parent claims.

44. As to "Point A", it is the Examiner's position that Kozdon discloses: "a plurality of compressed audio streams received by the server (**col. 3, line 4-5 & Fig 2, 108**) from conferencing stations (**col. 3, line 1-2 & Fig 2, clients 103-105**):

45. As to "Point B", it is the Examiner's position that the applicant is arguing elements not in the Claim language. The phrase "automatically" is neither in the claim language nor in the specifications.

46. As to "Point C", it is the Examiner's position that Kuzdon-Curtin disclose the invention substantially as claimed as explained above.

47. As to "Point D", it is the Examiner's position that the remaining claims rejections are proper since the claims from which they depend upon are properly rejected.

Prior Art of Record

48. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bhasin et al. (US. PG. Pub. No. US 20030177196) teaches a Method and system for providing proxy based caching services to a client device.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SAEED S. MIRZADEGAN whose telephone number is (571)270-3044. The examiner can normally be reached on M-F 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Vaughn can be reached on 571-272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. S. M./

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/William C. Vaughn, Jr./

Supervisory Patent Examiner, Art Unit 2144